

**CLAIMS*****We claim:***

1. A process for forming a derivative product, the process comprising the steps of:
  - (a) providing a product stream from an oxygenate-to-olefin reaction system, wherein the product stream contains propylene and one or more oxygenate contaminants;
  - (b) directing the product stream to a derivative process reactor; and
  - (c) converting the propylene in the derivative process reactor to the derivative product, wherein the derivative product comprises one or more of acrolein, acrylic acid, acrylonitrile, acetone, isopropanol, cumene, n-butylaldehyde, iso-butylaldehyde, 2-ethylhexanol or propylene oxide.
2. The process of claim 1, wherein the oxygenate contaminant comprises one or more of methanol, ethanol, dimethyl ether, ethanal, propanal, acetone, isopropyl alcohol or mixtures thereof.
3. The process of claim 1, wherein the product stream comprises at least about 10 wppm oxygenate contaminants, based on the total weight of the product stream.
4. The process of claim 3, wherein the product stream comprises at least about 1000 wppm oxygenate contaminants, based on the total weight of the product stream.
5. The process of claim 4, wherein the product stream comprises at least about 1 weight percent oxygenate contaminants, based on the total weight of the product stream.

6. The process of claim 5, wherein the product stream comprises at least about 2 weight percent oxygenate contaminants, based on the total weight of the product stream.
7. The process of claim 6, wherein the product stream comprises at least about 5 weight percent oxygenate contaminants, based on the total weight of the product stream.
8. The process of claim 1, wherein the product stream comprises from about 10 wppm to about 10 weight percent oxygenate contaminants, based on the total weight of the product stream.
9. The process of claim 4, wherein the product stream comprises less than about 10 weight percent oxygenate contaminants, based on the total weight of the product stream.
10. The process of claim 6, wherein the product stream comprises less than about 10 weight percent oxygenate contaminants, based on the total weight of the product stream.
11. The process of claim 7, wherein the product stream comprises less than about 10 weight percent oxygenate contaminants, based on the total weight of the product stream.
12. A process for forming a product from a propylene-containing stream, the process comprising the steps of
  - (a) providing a propylene-containing stream from an oxygenate-to-olefin reaction system; and
  - (b) contacting propylene in the propylene-containing stream with a catalyst under conditions effective to form the product, wherein the propylene-containing stream comprises at least about 1 weight percent of an oxygenate contaminant, wherein the oxygenate contaminant comprises

one or more of methanol, ethanol, dimethyl ether, ethanal, propanal, acetone, isopropyl alcohol or a mixture thereof, based on the total weight of the propylene-containing stream.

13. The process of claim 12, wherein the product is selected from the group consisting of acrolein, acrylic acid, acrylonitrile, acetone, isopropanol, cumene, n-butyraldehyde, iso-butyraldehyde, 2-ethyl hexanol, and propylene oxide.

14. The process of claim 12, wherein the product comprises acrolein, and the catalyst comprises a complex oxide based upon molybdenum and bismuth in combination with one or more of cobalt, iron, phosphorous or nickel.

15. The process of claim 12, wherein the product comprises acrylic acid, and the catalyst comprises an oxide of a metal selected from the group consisting of molybdenum, vanadium optionally with one or more of tungsten, copper, iron or manganese.

16. The process of claim 12, wherein the product comprises acrylonitrile, and the catalyst comprises an oxidic structure of the bismuth molybdate or bismuth ferromolybdate types.

17. The process of claim 12, wherein the product comprises acetone, and the catalyst comprises  $\text{PdCl}_2 \cdot \text{CuCl} \cdot \text{H}_2\text{O}$ .

18. The process of claim 12, wherein the product comprises isopropanol and the catalyst is selected from the group consisting of sodium silicotungstate, an ion exchange resin and sulphuric acid.

19. The process of claim 12, wherein the product comprises cumene and the catalyst comprises phosphoric acid/Kieselguhr or a zeolite.

20. The process of claim 12, wherein the product comprises 2-ethylhexanol and the catalyst comprises a cobalt carbonyl salt.
21. The process of claim 20, wherein the cobalt carbonyl salt comprises a phosphine ligand complex.
22. The process of claim 21, wherein the phosphine ligand complex comprises a rhodium phosphine ligand complex.
23. The process of claim 12, wherein the product comprises propylene oxide and the catalyst comprises a molybdenum complex in solution.
24. The process of claim 12, wherein the propylene-containing stream comprises at least about 2 weight percent oxygenate contaminants, based on the total weight of the propylene-containing stream.
25. The process of claim 12, wherein the propylene-containing stream comprises at least about 5 weight percent oxygenate contaminants, based on the total weight of the propylene-containing stream.
26. The process of claim 12, wherein the propylene-containing stream comprises at least about 10 weight percent oxygenate contaminants, based on the total weight of the propylene-containing stream.
27. The process of claim 12, wherein the process further comprises the step of separating a majority of the oxygenate contaminants from the product.